Comparing Information Literacy of Students from University of Graz (Austria) and Chungbuk National University (Republic of Korea)

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Abstract

In this article, we present the results of a study in which we compared information literacy of master students from the University of Graz, Austria and Chungbuk National University (CBNU), Republic of Korea. Data were collected using a multiple-choice questionnaire which consisted of the following parts: demographic data, self-assessment of one's information literacy, use of information sources, and knowledge test. The latter was designed on the basis of the Information Literacy Competency Standards for Higher Education (ALA, 2000). Data were collected in two classes of the Business Administration program at the University of Graz. At CBNU, the study participants were subscribed to the master programs of Business Administration, Management Information Systems, and Psychology. Usually, it took the students 20 minutes to fill out the questionnaire.
The results reveal that students from the University of Graz have a higher level of information literacy than their colleagues from CBNU. To some degree, this might be due to cultural and social differences between the students. However, the test instrument might have had also some cultural (European) bias. Finally, it turned out that the Korean students were more exposed toward the use of modern information and communication technologies.

Keywords: information literacy; comparison; questionnaire; University of Graz; Chungbuk National University; cultural differences

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1 Introduction

In today's information society, skills like searching, assessing, organizing and using information are more important than ever. This is not only true in the leisure time and at work but in particular in higher education. Information literacy has become a key qualification nowadays. So far, there exist several definitions on information literacy. According to the American Library Association (1989), information literacy is a set of abilities which are required to "recognize when information is needed and … to locate, evaluate, and use effectively the needed information."

Meanwhile several models and standards have been developed which try to shed more light on this concept. While models try to explain the entire information process or parts of it, like for instance the "Big 6 Skills" by Eisenberg and Berkowitz (1990) or the "Information Search Process" by Kuhlthau (1991), standards concentrate more on the skills information literacy consists of. Probably the best known of them are the Information Literacy Competency Standards for Higher Education by the American Library Association (2000). In the meantime, the Association of College and Research Libraries (2016) has provided an information literacy "framework" which tries to provide more "flexible options for implementation, rather than … a set of standards or learning outcomes, or any prescriptive enumeration of skills."

Many information literacy studies have been performed in particular in Anglo-American countries so far. In contrast, information literacy is not so well investigated in German-language countries (for instance, Beutelspacher, 2014, or Klatt et al., 2001). Also the authors of this paper have already conducted two similar studies in which they investigated information literacy on the basis of a questionnaire/knowledge test. In the first study, Beutelspacher, Henkel and Schlögl (2015) demonstrated that students in the bachelor program on business administration could clearly improve their level of information literacy in a specific course devoted to this topic. The second study analyzed the level of information literacy of student beginners from six bachelor programs each of which was offered by different faculties at the University of Graz. The results revealed that student beginners had only moderate information competencies which varied more or less strongly between the six bachelor programs/faculties (Maurer, Schlögl & Dreisiebner, 2017). How-

ever, to our knowledge no information literacy study which focused on cultural differences was conducted so far.

2 Research questions and methodology

In this study we aim at comparing information literacy of master students from the University of Graz and from Chungbuk National University (CBNU). The underlying research questions are:

1. How information literate are master students from the University of Graz and from Chungbuk National University?
2. Are the master students from the University of Graz more information literate than those from CBNU?
3. How do the students assess their own level of information literacy in comparison to their actual information literacy skills?

To avoid that the test participants require subject specific knowledge, we used the same knowledge test as in the previous study (study beginners) as a starting point (cf. Maurer, 2016). However, it turned out after the pre-test that a few questions had to be slightly changed in the Korean language version of the questionnaire. No changes were necessary in the German language version (for the master students from Graz).[1]

Like in the previous studies, the questionnaire consisted of four parts:

- personal/demographic data
- self-assessment of the level of information literacy by students
- knowledge test
- knowledge about use of information sources for study purposes.

Data collection at the University of Graz took place in the two Business Administration master courses "Retail Marketing" and "Seminar on Information Science and Information Systems" in May 2016. In total, 41 business administration students filled out the questionnaire.

Since it is common to start a job after the end of the bachelor program in Republic of Korea, it turned out to be more difficult to get a similar number of questionnaires at CBNU. Therefore, we decided to include also the master

1 The two questionnaires are included in Rust (2016: 74–90).

programs of Management Information Systems and of Psychology besides Business Administration in the survey. At CBNU, data collection took place in the calendar weeks 19–22. Altogether, we received 39 questionnaires from CBNU students. Usually, it took the Austrian and Korean students 20 minutes to complete the questionnaire. In seldom cases, when students had problems to understand a question, they had the possibility to ask for clarification.

3 Results

In this section, we follow the structure of the questionnaire. First we describe the demographic data of the survey participants from the University of Graz and from CBNU. Afterwards, we present the results of the knowledge test and compare the outcomes of the students from the University of Graz and CBNU. Then, we compare the results of the knowledge test to the self-evaluations of the students. Finally, we provide an insight to the information sources and tools used by the students for their studies and differences between the two universities.

3.1 Demographic data

Tables 1 and 2 show the demographic data of the Austrian and Korean students. Since Business Education students attend partly the same master courses as Business Administration students, the population of the University of Graz consists of these two groups: seven students from Business Education and 34 from Business Administration. Three quarters of the survey participants were female, one quarter was male. The gender distribution is more balanced for students from CBNU (20 female and 19 male). Furthermore, the mean age of CBNU students is slightly higher (26.7 vs. 24.9 years) than that of the students at University of Graz.

Table 1: Gender and age of respondents from the University of Graz

Study	*n*	Male	Female	Mean age
Business Administration	34	8	26	24.9
Business Education	7	3	4	25.1
Total	41	11	30	24.9

Table 2: Gender and age of respondents from Chungbuk National University

Study	*n*	Male	Female	Mean age
Management Information Systems	21	11	10	25.9
Business Administration	8	3	5	28.1
Psychology	10	5	5	27.3
Total	39	19	20	26.7

3.2 Results of knowledge test

The knowledge test consisted of 27 single and multiple-choice questions. The correct response to a single-choice question was rewarded with one point, for multiple-choice questions it was possible to get up to 1.5 points. In total, the test participants could receive 31.5 points. For the following analyses, a grade ranging from Very good (1) to Not sufficient (5) was derived on the basis of the total points received (table 3).

Table 3: Knowledge test – grading system

Points	Grade
28–31.5	1 – Very good
24.5–27.5	2 – Good
20–24	3 – Satisfactory
16–19.5	4 – Sufficient
0–15.5	5 – Not sufficient

As was not expected and as can be seen in figure 1, the knowledge test revealed big differences in the information literacy grades between the Austrian and Korean students. 80 percent of the students from the University of Graz were graded either Very good (1) or Good (2). This is in contrast to the students from CBNU, where information literacy of half of the test participants was evaluated Satisfactory (3). 41 percent were graded Sufficient (4) or even Not sufficient (5).

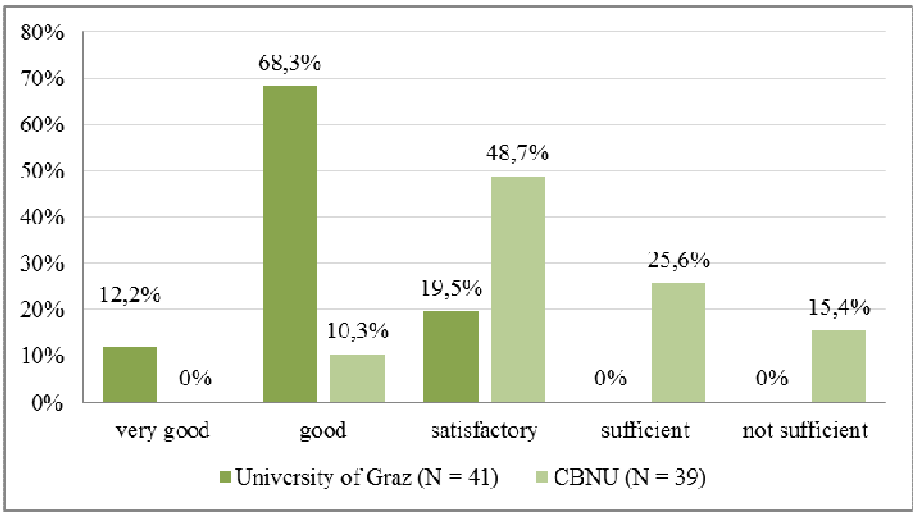

Fig. 1 Overall results of knowledge test: University of Graz vs. Chungbuk National University

3.3 Self-assessment of students

The operationalization of the questionnaire was conducted on the basis of the Information Literacy Competency Standards for Higher Education which distinguishes between five standards (American Library Association, 2000). Since standard 4 deals with the use of information which is more or less domain and subject specific, it was not considered in our survey. In contrast, we considered two aspects of standard 1 when it came to the self-assessment of information literacy by the students: the ability to identify one's information need and overview about relevant information sources (table 4).

Table 4: Self-assessment statements in the questionnaire

Standard	Statement
Standard 1	Ability to identify one's information need
Standard 1	Having an overview of relevant information sources
Standard 2	Searching for information on the internet and in databases
Standard 3	Evaluation and quality assessment of information and information sources
Standard 5	Knowledge and observance of ethical, legal and social principles in the handling of information

Table 5: Self-assessment by students from the University of Graz

Grade	Self-assessment				
	Standard 1		Standard 2	Standard 3	Standard 5
	Statement 1	Statement 2			
Very good	10 (24.4%)	10 (24.4%)	19 (46.3%)	7 (17.1%)	15 (36.6%)
Good	28 (68.3%)	26 (63.4%)	22 (53.7%)	15 (36.6%)	17 (41.5%)
Satisfactory	3 (7.3%)	4 (9.8%)	0 (0.0%)	17 (41.5%)	9 (22.0%)
Sufficient	0 (0.0%)	1 (2.4%)	0 (0.0%)	2 (4.9%)	0 (0.0%)
Not sufficient	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	41 (100%)	41 (100%)	41 (100%)	41 (100%)	41 (100%)

When comparing tables 5 and 6, it can be seen that students from the University of Graz assessed their level of information literacy higher than students from CBNU with regards to standards 1, 2 and 5. At least one quarter, and in case of standard 2 nearly half of the students from the University of Graz evaluated their competencies Very good (1). The difference in the self-assessment was closer for standard 3 (search for information in the internet and in databases).

Table 6: Self-assessment by students from Chungbuk National University

Grade	Self-assessment				
	Standard 1		Standard 2	Standard 3	Standard 5
	Statement 1	Statement 2			
Very good	5 (12.8%)	2 (5.1%)	5 (12.8%)	1 (2.6%)	1 (2.6%)
Good	11 (28.2%)	17 (43.6%)	20 (51.3%)	15 (38.5%)	14 (35.9%)
Satisfactory	17 (43.6%)	14 (35.9%)	9 (23.1%)	13 (33.3%)	15 (38.5%)
Sufficient	4 (10.3%)	4 (10.3%)	5 (12.8%)	6 (15.4%)	5 (12.8%)
Not sufficient	2 (5.1%)	2 (5.1%)	0 (0.0%)	4 (10.3%)	4 (10.3%)
Total	39 (100%)	39 (100%)	39 (100%)	39 (100%)	39 (100%)

Since each of the questions of the knowledge test can be assigned to a particular standard, it is also possible to compare the self-assessments for each standard with the actual test results (cf. table 7). One interesting result of this comparison is that nearly all students (ca. 85 percent) over-estimate their abilities to identify their information needs and to have an overview about the relevant information sources. This divergence is slightly lower with

regard to standard 2 (information search) with an "over-assessment" by approximately 60 percent of the students.

Contrary to the first two standards, the self-evaluation is more balanced when it comes to the knowledge of ethical, legal and social principles in the handling of information (standard 5). Approximately one third of the students overly estimate, realistically assess, and under-assess their information competencies in comparison with the results of their knowledge tests. In addition, there is little difference between the Austrian and the Korean students in this standard. Interestingly, there is also one standard for which many students under-estimate their competences: the evaluation and quality assessment of information and information sources (standard 3).

These results clearly show that information literacy is a very tricky issue: students usually believe that they are more information literate than they really are. This is particularly true for informational activities they perform very often.

Table 7: Comparison between self-assessment and actual level of information literacy: students from the University of Graz vs. Chungbuk National University

Self-assessment versus knowledge test			
	Realistic	Over	Under
Standard 1			
UG	4 (9.7%)	35 (85.4%)	2 (4.9%)
CBNU	4 (10.3%)	33 (84.6%)	2 (5.1%)
Total	8 (10.0%)	68 (85.0%)	4 (5.0%)
Standard 2			
UG	12 (29.2%)	22 (53.7%)	7 (17.1%)
CBNU	6 (15.4%)	25 (64.1%)	8 (20.5%)
Total	18 (22.5%)	47 (58.8%)	15 (18.7%)
Standard 3			
UG	9 (22.0%)	8 (19.5%)	24 (58.5%)
CBNU	8 (20.5%)	15 (38.5%)	16 (41.0%)
Total	17 (21.3%)	23 (28.7%)	40 (50.0%)
Standard 5			
UG	15 (36.6%)	13 (31.7%)	13 (31.7%)
CBNU	11 (28.2%)	15 (38.5%)	13 (33.3%)
Total	26 (32.5%)	28 (35.0%)	26 (32.5%)

3.4 Knowledge and use of information sources

The usage rates of web search engines and information sources show again differences between the Koreans and Austrians. Nearly all CBNU students (95 percent) use web search engines several times a day. This is true for 78 percent of the students from Graz (table 8).

Table 8: Frequency of use of web search engines

University	Usage of web search engines					Total
	Several times a day	Once a day	Several times a week	Once a week	Never	
UG	32 (78.0%)	4 (9.8%)	5 (12.2%)	0 (0.0%)	0 (0%)	41 (100%)
CBNU	37 (94.9%)	2 (5.1%)	0 (0.0%)	0 (0.0%)	0 (0%)	39 (100%)
Total	69 (86.3%)	6 (7.5%)	5 (6.2%)	0 (0.0%)	0 (0%)	80 (100%)

The analysis concerning the use of information sources and tools for study purposes (fig. 2 and 3) shows that the students from Graz use "traditional" sources like books, online books and library catalogues more often (fig. 2).

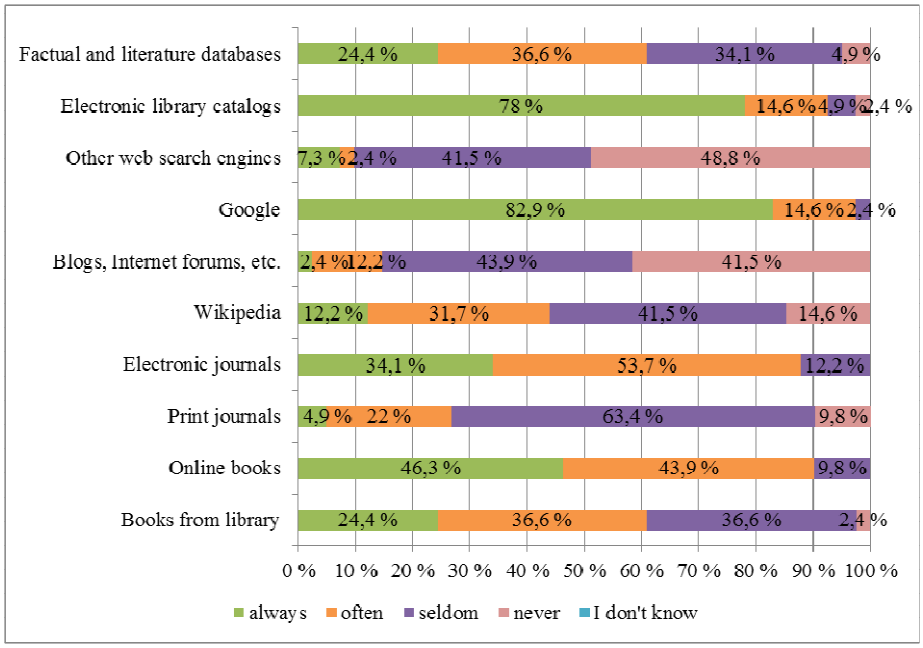

Fig. 2 Use of different information sources and tools by students from the University of Graz

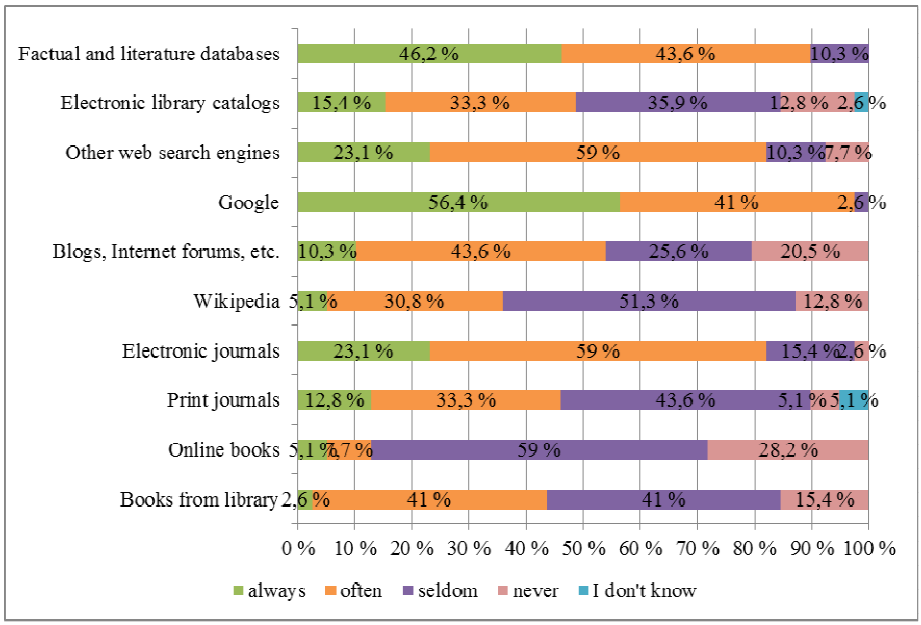

Fig. 3 Use of different information sources and tools by students from Chungbuk National University

In contrast, the Korean students use databases, blogs, internet forums, and other web search engines (than Google) more frequently (fig. 3). The latter can be explained in that Google does not have a monopoly in Republic of Korea unlike in Europe.

4 Discussion

Our study illustrates that there are big differences in the level of information literacy between master students from the University of Graz and CBNU. On average, students from the University of Graz are graded one level higher than CBNU students. Both Austrian and Korean students overly assess their information literacy skills in comparison with their actual skills resulted from the knowledge tests. This is particularly true for information activities which they are accustomed to, for instance, searching for information and defining the information need.

To some degree, these differences may be attributed to cultural and social issues. While Western societies are much more individualistic, Asian cultures usually have much higher levels of collectivism (Kim, Sohn & Choi, 2011). One of the most famous concepts for explaining intercultural differences was developed by Hofstede. In one of his more recent publications, Hofstede (2001) distinguishes between six dimensions which can be used to explain cultural differences: power distance, individualism/collectivism, masculinity/femininity, uncertainty avoidance, long-term/short-term orientation, and indulgence/restraint. Hofstede also provides a tool which delivers scores (0–100) for each of these six dimensions for a country.[2] For instance, Austria scores low (11 points) in the power distance dimension, while Republic of Korea has a much higher score (60 points). This means that Korea is a more hierarchical society.

Although this study does not directly measure the relationship between cultural aspects and information literacy, these cultural and social differences may influence the developments of education systems (Sung & Han, 2011). In the Korean education system, known as 'cramming education', it is common practice to absorb large volumes of given informational material. In this case, students need to memorize a lot of information to meet a highly required standard (ibid.). This means that the Korean education system does not focus on developing students' own thinking and creativity but building a large knowledge deposit on students (ibid.). Meanwhile, the Austrian and many Western education systems focus on developing problem-solving capabilities of students (ibid.). As a result, this kind of norm may induce students to develop their information literacies. For instance, finding information possibly requires a certain degree of creativity of using and combining key words. If these key words are given, maybe, Korean students can find relevant information faster than Austrian students. However, this was not part of the information literacy test. Furthermore, this kind of cultural background explains why the most popular web search engines in Korea are Naver and Daum, but not Google. These web search engines suggest only the most relevant websites, while Google lists all websites to its users from which they have to choose the most relevant ones. If the information literacy test would include performance dimensions with regard to finding and organizing information, for example, how fast a student finds relevant information for given key words, maybe, Korean students would perform higher than Aus-

2 https://geert-hofstede.com/countries.html

trian students. Although this speculation is one way to explain the results, this conjecture should be studied in more detail in the future.

Furthermore, the analysis concerning the use of information sources indicates that CBNU students are more IT literate than their counterparts from Graz. The use of search engines is part of everyday life in Korea. Moreover, CBNU students rely much more on "modern" media, like for instance blogs, internet forums, search engines, and databases. It follows that a high level of IT literacy does not go along automatically with a high level of information literacy. But again, this finding should be further studied along with the speculation mentioned above.

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